REMARKS

After entering the above amendments, claims 1-44 will be pending. Reconsideration and allowance of the current application are requested in light of the above-marked amendments and the foregoing remarks.

Summary of Rejections. The Office has provisionally rejected claims 1-44 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-28 of co-pending Application No. 11/369,231. Upon a notice of allowability of the now-pending claims, Applicant will file a terminal disclaimer.

The Office has rejected claims 17-18 and 26-27 under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description requirement; claims; claims 1-12, 15-16, 19, 21-24, 34-37, and 42-43 under 35 U.S.C. §102(e) as allegedly being anticipated by Bassiri, U.S. Pub. No. 2006/0046642 (hereinafter "Bassiri"); and claims 6, 13, 14, 20, 25, and 44 under 35 U.S.C. §103(a) as allegedly being unpatentable over Bassiri in view of Khayrallah, U.S. Pub. No. 2002/0115409 ("Khayrallah").

Claims 28-33 and 38-41 have been objected to as being dependent on a rejected base claim. Applicant respectfully acknowledges with gratitude that claims 28-33 and 38-41 have been deemed allowable by the Office if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. Claims 28-29, 32-33, and 38-41 have been amended to incorporate all of the limitations of claim 1, and are therefore in present allowable form.

Rejections under 35 USC §112, First Paragraph

Claims 17-18 and 26-27 stand rejected under 35 U.S.C. §112, first paragraph, because the Office alleges that the claims lack written description/enablement.

Regarding claim 17, the Office alleges that the recited subject matter of "dedicated wire-line data and/or control links in the communication pathway between the network unit and the user unit selected from among links in a group consisting of electric wires, telephone lines, and coaxial cables" is not described in the specification. Applicant respectfully traverses. Description of, and support for, this subject matter is at least found in paragraphs [0098], [0100], [0103], [0104] and [0110] of the specification.

Regarding claim 18, the Office alleges that the recited subject matter of "dedicated wire-line data and/or control links in the communication pathway between the network unit and the user unit based on a wireline standard" is not described in the specification. Applicant respectfully traverses. Description of, and support for, this subject matter is at least found in paragraphs [0098], [0100], [0103], [0104] and [0110] of the specification.

Regarding claim 26, the Office alleges that the recited subject matter of "an identification and reference frequency unit that generates a Binary Phase Shift Keying (BPSK) signal modulated by the identification number, modulates the signal at a suitable part of the operating unlicensed spectrum band, and couples the signal into a transmitter pathway of a forward-link of the network unit" is not described in the specification. Applicant respectfully traverses. Description of, and support for, this subject matter is at least found in paragraph [0039].

Regarding claim 26, the Office alleges that the recited subject matter of "an identification and location unit that modulates identification and location information on a reverse link communication waveform n by coded low bit-rate modulation, the modulation being amplitude modulation or Differential Quadrature Phase Shift Keying (DQPSK) modulation" is not described in the specification. Applicant respectfully traverses. Description of, and support for, this subject matter is at least found in paragraph [0050].

Rejections under 35 USC §102

Claims 1-12, 15-16, 19, 21-24, 34-37, and 42-43 stand rejected under 35 U.S.C. §102 as allegedly being anticipated by Bassiri. To present a valid anticipation rejection under 35 U.S.C. §102, the Office must identify a single prior art reference in which "each and every element as set forth in the claim is found, either expressly or inherently described." MPEP §2131 quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The rejection over Bassiri fails to satisfy this burden with regards to the currently pending claims.

The present invention is directed to a single repeater, split into two parts, a "network unit" and a "user unit" that are used together to function as a single repeater. If either the "network" or the "user" unit does not function, the original cellular RF signals will not be repeated. The claimed repeater includes a two-way communication pathway between the network and user units, making it a three-hop repeater with three autonomous repeater hops. The signal in the middle hop between the two units is in a different frequency band and has a different waveform (envelope and bandwidth) from the repeated cellular RF signal. Only after the signal is handled by both network and user units of the repeater, irrespective of order, will the original frequency and waveform be restored.

Amended claim 1, which has been amended to clarify its subject matter in particular, recites "a beam-former unit respectively coupled to each of the network unit and the user unit, each beam-former unit being adapted to communicate signals in an operating frequency band of the network transceiver or user transceiver, and to control effective radiated power *to maximize radio frequency isolation between the network unit and the user unit*" (emphasis added).

Bassiri discloses a communication system made up of two or more cascaded (individual) repeaters. The first of these repeaters is referred to as "primary," and is placed where an RF signal

from a base station is present. The subsequent repeaters are referred to as "auxiliary" repeaters (see paragraph [0006]). The primary repeater is optional and can be replaced by a "gateway" antenna (see claim 1 and paragraph [0006]). Each primary and auxiliary repeater is a complete repeater capable of operating on its own. These repeaters have the capability of communicating control signaling through a separate control channel which is on a "different frequency" (paragraph [0012]) from the original traffic frequency, referred to by Bassiri as "uplink RF signal" and "downlink RF signal." There is no frequency shift or waveform modifications in the original "uplink RF signal" and the "downlink RF signal" (i.e. the original traffic signal), in the hop between two repeaters. If the "auxiliary" repeater is removed, the RF coverage provided by the "primary" repeater can still be used by a handset for communicating with the base station.

Further, Bassiri discloses a system with an adaptive power control mechanism, but fails to disclose a beam-forming or null-steering antenna system. In the present invention, a relative phase and amplitude of the individual antennas in a phased array antenna system enables the beam-forming operation to take place.

The antennas described by Bassiri are fixed beam, directional and/or omni directional antennas (see paragraph [0028]), neither of which require or suggest a need for beam forming. Further, the antennas 12, 16, and 18, shown in figure 1 of Bassiri are explicitly not suitable in a beam-forming network as antenna 12 is under control of another repeater (primary repeater 10), which is different from the repeater controlling antennas 16 and 18 (auxiliary repeater 14). Clearly, there is no teaching of coordinated beamforming operation between the primary and auxiliary repeaters, nor any teaching or suggestion to beamform between the two repeaters, given the physical distance between them. Also, antennas 16 and 18 are transmitting and receiving different frequencies. While antenna 16 receives the downlink frequency and transmits the uplink frequency,

antenna 18 transmits the downlink frequency while receiving the uplink frequency (opposite to antenna 16). Therefore these antennas are not, and cannot be, part of the same beam-forming system. Accordingly, Bassiri fails to teach or suggest beamforming, and in particular fails to teach or suggest a beamforming unit to maximize radio frequency isolation between the network unit and the user unit. Thus, Bassiri does not anticipate claim 1.

Claim 1 has been further clarified to recite, as amended, "the signal communication between the network unit and the user unit having a signal waveform that is independent of the operating frequency band of the signal communication between the network and user transceivers." Bassiri fails to teach a signal waveform between repeaters that is independent of an operating frequency of signal communications the network and user transceivers. For at least the reasons set forth above, Bassiri fails to anticipate claim 1. Applicant respectfully requests the rejection be withdrawn.

Claims 2-12, 15-16, 19, 21-24, 34-37, and 42-43 are allowable over Bassiri at least for their dependence on allowable claim 1.

Rejections under 35 USC §103

Claims 6, 13, 14, 20, 25, and 44 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentably over Bassiri as applied to claim 1 above, and further in view of Khayrallah.

With respect to claims 6, 13-14, and 20, Khayrallah was cited for the proposition that it teaches the repeater hop between the user unit and the network unit being selected from the group consisting of "an Unlicensed National Information Infrastructure (U-ISM) spectrum frequency band, an Unlicensed Personal Communication Services (U-PCS) spectrum frequency band, an Industrial, Scientific and Medical (ISM) spectrum frequency band, and any unlicensed frequency band" (claim 6), unlicensed frequency bands (claims 13 and 14), or Bluetooth or any other 802.11 or

other wireless standard (claim 20). With respect to claim 25, Khayrallah was cited for the proposition that it teaches unique identifier numbers assigned to the network unit and the user unit. With respect to claim 44, Khayrallah was cited for the proposition that it teaches an operating band at a frequency that does not interfere with other devices operating in the unlicensed frequency band.

Claims 6, 13, 14, 20, 25, and 44 are allowable at least for their dependence on an allowable, and patentably distinct claim 1.

Further, for a proper rejection under 35 U.S.C. §103(a), the Office "bears the initial burden of factually supporting any *prima facie* conclusion of obviousness" and must therefore present "a clear articulation of the reason(s) why the claimed invention would have been obvious." MPEP §2142. An obviousness rejection "cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." MPEP §2141 quoting *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1386, 1385 (2007). This rationale must include a showing that all of the claimed elements were known in the prior art and that one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, to produce a combination yielding nothing more than predictable results to one of ordinary skill in the art. *KSR*, 82 USPQ2d at 1395. MPEP §2141.02 further notes that "a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). The rejection over Bassiri in view of Khayrallah fails to satisfy this burden with regards to the currently pending claims.

Khayrallah teaches a Bluetooth system which is TDD operating at 2.4 GHz (ISM band). The repeaters taught by Khayrallah receive and decode and subsequently buffer the information data,

before re-modulating and transmitting them in an available MAC slot. These repeaters essentially transmit in one direction at the time only (uplink or downlink) with high latency, and use a single transceiver for both receiver and transmitter functions (hence a single antenna shown in the figures).

Accordingly, Khayrallah teaches away from the claimed invention of a three hop repeater system having an autonomous middle hop that is frequency-independent from the other two hops. For this further reason, the combination of Bassiri and Khayrallah fails to make obvious claims 6, 13, 14, 20, 25, and 44, and Applicant respectfully requests withdrawal of the pending rejections.

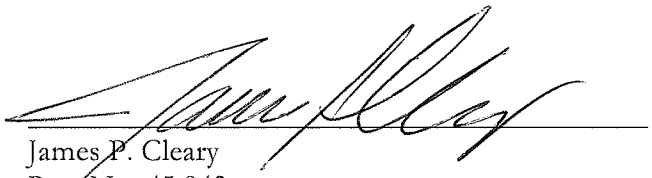
CONCLUSION

On the basis of the foregoing amendments, the pending claims are in condition for allowance. It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Applicant is concurrently filing herewith a Petition for a two-month extension of time with the requisite fee. No additional fees are believed to be due, however, the Commissioner is hereby authorized to charge the additional claim fee and any additional fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 35928-502NATL. If there are any questions regarding this reply, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

Date: July 29, 2008



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